Cultural Resources Survey for the San Antonio Parks and Recreation Department's Zoo Water Treatment Plant Project, Bexar County, Texas

Herbert G. Uecker, Principal Investigator

Prepared for the City of San Antonio Parks and Recreation Department

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Texas Antiquities Permit 4917



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#### Abstract

In late May, 2008, South Texas Archeological Research Services, LLC, conducted a cultural resources survey for the City of San Antonio Parks and Recreation Department's Zoo Water Treatment Plant project area, Bexar County, Texas. The focus of the survey was identification, inventory, and survey-level assessment of archeological resources within the project area. Because the project area was owned by the city, the work was necessary to comply with requirements of the Antiquities Code of Texas, and the Texas Historical Commission issued Texas Antiquities Permit 4917 for the investigation. Also, because the project involved possible oversight by the Environmental Protection Agency, it was subject to compliance with Section 106 of the National Historic Preservation Act.

The area investigated was roughly rectangular shaped and contained about one acre. Most of the area was in Brackenridge Park and the remainder was in San Antonio Zoo property. Substantial portions of the area were disturbed in prior times by construction of improvements, cutting and filling, channelization of the small drainage through the area, and similar activities.

A search of the Texas Historical Commission's *Texas Archeological Sites Atlas* conducted prior to fieldwork indicated that the project area contained no previously recorded archeological sites and had not been investigated since the late 1970s. The previous surveys were conducted in 1979 by the United States Army Corps of Engineers and/or the Texas Parks and Wildlife Department, and apparently yielded negative findings. However, archival evidence suggested that the route of the Upper Labor Acequia is probably in part of the project area.

Also according to the atlas, two previously recorded prehistoric archeological sites along the margins of the San Antonio River in the general vicinity of the project area, 41BX264 and 41BX323, were intensively investigated since 2002 and yielded relatively well-preserved archeological resources of the Late Paleoindian through Late Prehistoric periods of the culture history of the region. The proximity of these sites, and of the San Antonio River, increased the odds that the project area could contain unknown archeological resources that originated during prehistory.

A conventional pedestrian examination of the ground surface, and survey-level subsurface tests were performed. The surface inspection produced negative results, and most of the tests encountered only thin, disturbed, near-surface deposits containing small fragments of modern trash over imported crushed limestone and caliche fill about two decimeters thick, over Houston Black clay subsoils. Nothing was collected or curated in conjunction with the survey. The Principal Investigator believed that future ground disturbances within the project area should not affect any archeological sites eligible for listing in the National Register of Historic Places or for designation as State Archeological Landmarks and recommended that, barring unexpected finds during construction, the project should proceed without additional archeological work. The Principal Investigator also recommended that if any archeological resources were encountered during construction, work should immediately be halted in the vicinity until the finds could be examined and evaluated by a qualified archeological consultant and/or the commission.

The project area or immediate vicinity contained several historic buildings, structures, or objects that the Principal Investigator believed were eligible or potentially eligible for listing in the National Register of Historic Places and/or designation as Recorded Texas Historic Landmarks. Since at the time of the survey those resources were being separately documented for formal review by the commission's History Programs Division, they were not thoroughly investigated in conjunction with the survey, but some of the information gathered separately was included in the survey report of findings. The non-archeological historic properties found include, for example, two WPA-era picnic pavilions, an old zoo restroom building that could pre-date the WPA work, a drainage channel segment that might be of Spanish Colonial vintage, and two huge historic cypress trees along a postulated former route of the Upper Labor Acequia.



## Acknowledgements

South Texas Archeological Research Services, LLC, was assisted in coordinating and performing the survey by several persons whose help is gratefully acknowledged: San Antonio Parks and Recreation Department Park Project Services Project Coodinator Bill Pennell; City of San Antonio Planning Department staff archeologist V. Kay Hindes; San Antonio Zoo staff members Chris Van Skike and Felix Saucedo, and all of the zoo's security and support staff who generously helped when needed; archeological technician and mapping specialist Albert Uecker, Registered Professional Land Surveyor; archeological field assistant Jay McCracken; and Texas Historical Commission Archeology Division reviewer William A. Martin.



#### Introduction

At the request of the City of San Antonio (COSA) Parks and Recreation Department (SAPAR), on May 21, 2008, South Texas Archeological Research Services, LLC (STARS), conducted fieldwork for a cultural resources survey for the SAPAR Zoo Water Treatment Plant Project, Bexar County, Texas (Figure 1). Based on draft plans by Klotz Associates, Inc. (KAI; 2007), the project consisted principally of construction of a plant building within the existing emergency vehicle and maintenance cart lane just south of the Zoo capybara pen, and of associated modifications to the existing drainage channel between the pen and the San Antonio River (Figure 2). The purpose of the water treatment plant (WTP) was to sterilize waste water from the San Antonio Zoo (SAZ) animal pens by intensive irradiation with ultraviolet light, prior to discharge into the river.

Because the project area was owned by the city, the survey was necessary to comply with requirements of the Antiquities Code of Texas (ACT) and the Texas Historical Commission (THC) issued Texas Antiquities Permit 4917 for the survey. Also, because the project involved eventual discharge of treated waste water into the San Antonio River that would likely have to be reviewed or permitted by the Environmental Protection Agency according to the National Pollutant Discharge Elimination System or similar statutes or regulations, the project was subject to compliance with Section 106 of the National Historic Preservation Act (NHPA).

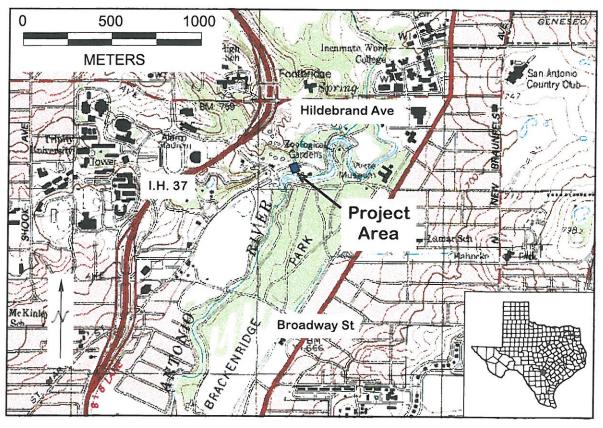


Figure 1. Approximate Plot of Project Area (shown as purple square at time of arrow) on section of San Antonio East, Texas, United States Geological Survey 7.5-minute topographic quadrangle map. Inset shows location of Bexar County in Texas.

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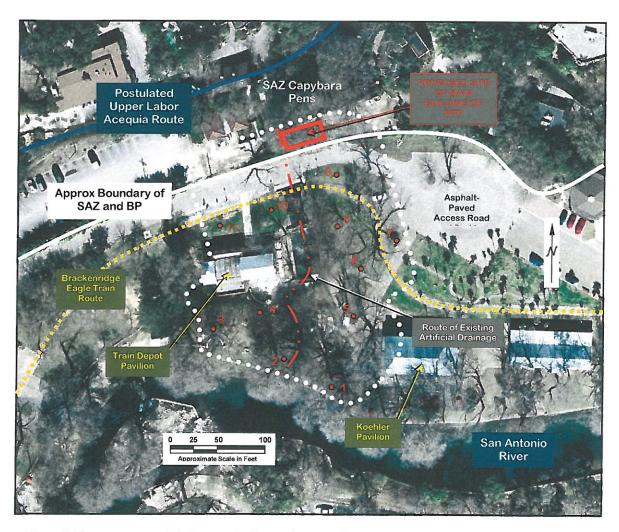


Figure 2. Plots on recent aerial photograph of approximate project area (within dotted white border) and various improvements and features in the vicinity. Orange dots with numbers show approximate locations of STARS archeological shovel tests. Location for proposed WTP main building provided courtesy of KAI and SAZ.

The area investigated was roughly rectangular shaped and contained about one acre. It was bordered on the north by the SAZ capybara pen, on the east and west by improved lands of Brackenridge Park (BP), and on the south by a segment of the San Antonio River. A relatively narrow, shallow, channelized drainage feature that was probably of artificial origin, meandered gently from north to south through the approximate center of the project area. At the time of the survey, the area contained numerous modern improvements added in years or decades past, including metal fences; picnic pavilions and pergolas; asphalt-paved street segments; SAZ emergency-vehicle and maintenance-cart lanes; miniature railroad tracks; pedestrian paths and paved walkways; post lamps; native-stone retaining walls, small footbridges across the drainage, and tree wells; wooden decks; and yards and landscape beds.

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A search of the Texas Historical Commission's (2008) *Texas Archeological Sites Atlas* conducted just prior to fieldwork indicated that the project area contained no previously recorded archeological sites and had not been investigated since the late 1970s. However, two maps of San Antonio's acequia routes (cf. Cox 2005:28; COSA Public Works Department 2002) indicated that the route of the Upper Labor Acequia probably passed through the northern portion of the project area, about where the SAZ capypara pond was situated.

According to the atlas data examined, the last cultural resources surveys in the immediate vicinity were conducted in 1979 by the United States Army Corps of Engineers and/or the Texas Parks and Wildlife Department, and apparently yielded negative findings. Also according to the atlas, the previously recorded archeological site nearest to the project area was 41BX323, a burned rock midden campsite of prehistoric origins a short distance due east of, and on the opposite side of the San Antonio River from, the SAPAR project area. Site 41BX323 was intensively investigated by SWCA, Inc., Environmental Consultants (2002) in 2001, and the site yielded small quantities of artifacts associated with relatively well-preserved features of localized extent, that apparently originated during the Late Paleoindian, Early Archaic, Middle Archaic, and Late Prehistoric periods of the culture history of the region.

The survey was led by Principal Investigator Herbert G. Uecker, who was assisted by archeological mapping specialist Albert Uecker, RPLS, and by archeological technician Jay McCracken. This report conforms to the Council of Texas Archeologists reporting guidelines for cases of negative findings.

### General Background

Regional Natural Setting and Natural History

At the time of the investigation, the regional physiographic and geologic setting of the area investigated had already been described in considerable detail (cf. Abbott and Woodruff 1986; Black 1989a:5-16; Black and McGraw 1985:40-54). Briefly, the area is near the southern edge of the Balcones Escarpment and Fault Zone at an average elevation of about 200 meters above sea level. The fault and escarpment region is also known as the Balcones Canyonlands. Intermittent faulting began in the area during the Miocene geologic epoch about 15-21 million years ago and continued until about a million years ago.

The regional geomorphology consists of a series of northeast to southwest trending fault scarps and associated erosional features. The regional drainage pattern is dendritic and major drainages in the region include the Medina, Guadalupe, and San Antonio Rivers. Several prominent secondary drainages, such as Culebra, San Pedro, Salado, Mud, and Elm Creeks, also dissect the general area.

Base or parent rocks in the canyonlands zone include several members of the Lower Cretaceous series including the Del Rio shale formation and the Buda, Edwards, and Glenrose limestones. These formations collectively range up to as much as 10,000 meters thick over much of central and south Texas. They were formed during the Cretaceous geologic period between about 120 and 65 million years ago. During the last several million years, numerous karst features have formed within the limestone formations, which also house the Edwards aquifer (cf. Veni 1988:11-26; 1998). The aquifer is a regional-scale phenomenon composed of porous beds of limestone and shale sandwiched between less permeable calcareous strata and it is virtually the sole source of potable water for much of central Texas. Soils in the canyonlands region are derivatives of the local bedrock and are typically very thin, stony, and underdeveloped in the uplands.

Ecologically, the area has been a resource-refugium zone since the middle of the Holocene geologic epoch about 7,000 years before present (B.P. [present being arbitrarily defined by culture historians as A.D. 1950]). It was at that juncture in time that the onset of the Altithermal climatic episode (Nance 1972) began to substantially alter the climate of the North American southwest, including Texas. The Altithermal was a period of relatively intense

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heating and drying that lasted, with many short breaks, until the present time. As the lush tall-grass steppes and mixed-grass prairies of south and west Texas were reduced to thorn scrublands and semiarid deserts over several millennia, both animal and human populations congregated in such areas as the Rio Grande basin and the mountain forests of west Texas and northern Mexico, and also in the central Texas Hill Country. South and west of the Hill Country, riparian zones slowly evolved into isolated ribbons of resources, and many unique places along the area's rivers and streams became centers of human population.

The area investigated is situated within a broad ecotonal zone that exhibits characteristics of three major natural regions (cf. Blair 1950; Riskind and Diamond 1988): (1) the Balconian Biotic Province, a subtropical, subhumid mixed woodland or parkland that is geographically congruent with much of the Texas Hill Country and is dominated by juniper-oak scrub forests; (2) the Tamaulipan Biotic Province, a subtropical to megathermal desert steppe or thorn scrubland that ranges southward from central Texas into the coastal and Rio Grande plains and well into northern Mexico that is dominated by huisache and mesquite; and (3) the Blackland Prairie, a subtropical, subhumid area characterized by mixed savannah grassland or prairie and by postoak-blackjack oak woodlands that ranges northward and eastward to the Red River area near the Texas-Oklahoma border. The climate of these regions during the last several millennia has been typified by short mild winters and long hot summers. Modern annual precipitation in the area averages about 700-800 mm and follows a bimodal pattern with maxima in May and September. The Balcones tablelands have sometimes been the locus of world record precipitation events triggered by tropical waves of warm moist air from the Gulf of Mexico colliding with colder dryer air of arctic and subarctic origins surging southward from the high plains (Caran and Baker 1986).

In 2008, there were hundreds or even thousands of species of plants, animals, and insects thriving in central Texas. It is beyond the scope of this report to include a comprehensive listing or description of these species but the interested reader is referred to publications by Davis (1960), Enquist (1987), Everitt and Drawe (1993), Kutac and Caran (1994), Neck (1986), Riskind and Diamond (1986), Simpson (1988), and Vines (1984). Major terrestrial faunal species and avifaunal species of the area include the white-tailed deer, javalina, coyote, red fox, opossum, raccoon, ringtailed cat, squirrel, striped skunk, armadillo, wild turkey, bobwhite quail, Inca dove, white-winged dove, box tortoise, and western diamondback rattlesnake. Prominent raptors of the region include turkey and black vultures and various species of owls; and red-tailed hawks, eagles, and peregrine falcons. Also, modest numbers of cougar and bobcat are present in the less populated areas.

Prominent plant species and communities of the San Antonio/Bexar County areas are typical of those found throughout much of central Texas. Live oak, mountain laurel, persimmon, and juniper are major tree varieties of the hill country scrub forests. Tree species such as mesquite, huisache, and blackbrush acacia; and many cacti and yuccas including prickly pear, Spanish dagger, and sotol are prevalent in lowland thorn shrub thickets. Stream courses and river bottoms of the region contain a broad spectrum of native deciduous trees including Spanish oak, cedar elm, hackberry, pecan, walnut, cherry, and ash. Whitebrush, giant ragweed, cockle burrs, snow-on-the-prairie, frost plant, and numerous other herbs and forbs cover the forest floors. Dozens of types of short and mid grasses carpet the region's prairies and savannas.

## Regional Culture History and Cultural Ecology

Probably attracted by the abundance of pristine water, the steep ecological gradients, and the rich biotic microenvironments present, humans first occupied the central Texas area at least 11,000 years B.P. The local culture history contains four broad divisions (cf. Black 1989b:25-33, 1989c:48-57; Black and McGraw 1985:35-40; Hester 1980:27-37; Turner and Hester 1999:50-63): the Paleoindian period (ca. 11,000-8000 B.P.), the Archaic period (ca. 8000-1500 B.P.), the Late Prehistoric period (ca. 1500 B. P. to A.D. 1528), and the Historic period (ca. A.D. 1528 to present). During all but the Historic period, humans in the area were engaged in a nomadic to semi-sedentary hunting and foraging lifeway. Archeological evidence indicates that they were organized as small groups or bands that traveled much of the time in regular patterns, known as subsistence forays, in order to exploit a variety of

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seasonably available natural resources. This lifeway was practiced in most of North America for many thousands of years before the fifteenth century infusion of Europeans to the New World.

Such peoples were largely of Asiatic origin, but are variously referred to as aboriginals, native Americans, American Indians, ancient Americans, or early Americans. Apparently many of these pioneers entered North America from eastern Siberia via the Bering Strait, sometime prior to about 15,000 B.P., probably during a major episode of global cooling and glaciation, when an ice sheet or bridge connected Siberia to Alaska. They eventually spread throughout the Americas, and their cultures flourished and greatly diversified, especially during the last few thousand years. By the early eighteenth century when the Spanish established missions in Texas, several hundred Indian groups, each having a fairly distinct linguistic or socio-political identity, lived in the southwestern United States, Texas, and northern Mexico (cf. Campbell 1979:1, 1988:39; Schuetz 1976:1). The story of these peoples' prehistoric past encompasses the first three major periods in the culture history of the central Texas area.

The Paleoindian period includes the terminus of the Pleistocene geologic epoch and the beginning of the Holocene. The climate of the period was generally somewhat cooler and more humid than that of later periods. The natural landscape in much of central Texas during this period consisted mostly of forest parkland, i.e., savannah grasslands with numerous clusters of trees. The lush vegetation of the period provided a trophic base which supported many large ice-age herbivores and carnivores. Sea level along the Texas coast is estimated to have been about 120 m lower than at present; thus, a broad seaward expanse of land, which is now inundated, existed during those times. Paleoindians were typically organized as small, nomadic, stone-age, hunting and foraging bands that often pursued such large game as bison, mammoth, and mastodon. The fact that they supplemented their diets with wild plant foods has been documented only occasionally in much of Texas because of the poor preservation of pollen and plant fibers in most local soils. The relatively few Paleoindian sites documented in Texas consist primarily of isolated finds of chipped stone spear points that exhibit highly distinctive styles and workmanship, and rare kill and butchering sites of Pleistocene game animals.

The Archaic period is characterized by a shift to generally dryer and warmer conditions, sometimes referred to as the Altithermal climatic period (Nance 1972). The Altithermal of Texas apparently was punctuated by alternating mesic and xeric episodes that were sometimes of significant duration and magnitude. In spite of these erratic patterns, the landscape gradually evolved into a mosaic of alternately sparse and lush savannah grasslands with isolated stands of trees on the uplands and heavier arboreal growth in the riparian zones. This drying out of the land after the Pleistocene corresponds to broad changes in the lifeways and cultures of native peoples. The archeological record indicates that a substantial degree of diversification in human subsistence patterns occurred. Emphasis shifted from the hunting of large Pleistocene mammals, by then extinct, to a new focus on the hunting of smaller game and on plant food gathering, processing, and consumption. During most of the period the dominant lifeway continued to be nomadic hunting and foraging by small egalitarian bands who exploited scattered seasonal resources. As evinced principally by the appearance in the archeological record of large communal or clan cemeteries toward the end of the period, land and other resource scarcities occurred, larger groups were formed, and territorialism, sociopolitical complexity, and semi-permanent or permanent settlements formed.

The predominant type of central and south Texas archeological site of the period is the occupational refuse pile, or midden. Such midden sites are frequently large, open, seasonally occupied base camps located along rivers and streams. They were central places used for the accumulation, processing, cooking, and consumption of foods, and presumably for habitation as well. They were also occasionally used for burying the dead (Hester 1985). Burned rock middens are the most common type present at interior sites. At such sites, foods were often cooked in earthen pits lined with rock slabs or boiled in hide pouches filled with water, food, and hot stones. The rocks had to be routinely replaced as they disintegrated from continual exposure to the intense heat. This resulted in the gradual accumulation of large heaps of thermally fractured and discolored rocks mixed with food scraps, discarded tools, and tool manufacturing debris. Diagnostic projectile points, radiocarbon dates, and other archeological data from burned-rock-midden sites indicate that many of them were occupied intermittently for several hundreds or even

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thousands of years by peoples who normally wandered about in small bands, but who gathered into much larger bands for special seasonal activities and ceremonies. Other types of sites that are associated with the Archaic period include smaller, shorter-term occupancy or use sites such as upland hunting-butchering camps, quarry-workshop sites for the procurement of raw stone for the manufacturing of chipped stone tools, cavern or rockshelter habitation sites, isolated hearths and stone chipping scatters, burial and cemetery sites, and isolated finds or caches of projectile points or other tools.

During the Late Prehistoric period, plant domestication and other agricultural practices were gradually adopted. Due to the poor preservation of plant remains in prehistoric archeological deposits of central and south Texas, the extent to which these new subsistence activities were used is not known. The bow and arrow and ceramic technology were introduced from neighboring regions. Permanent settlements arose and trade networks for the routine exchange of goods with neighboring regions were greatly expanded. Sociopolitical relationships were elaborated and the concepts of local group identity and coherence were undoubtedly strengthened.

The impact of these changes on the lifeways of the native peoples living in central and south Texas during the period is just beginning to be known. Apparently with few exceptions, the Archaic lifeways practiced in south and south-central Texas continued largely unmodified into the Late Prehistoric period. The modifications in the technological and cultural inventory that occurred there during the Late Prehistoric period and that manifest archeologically include the production and widespread distribution of smaller, lighter stone tips for arrows and the routine production and use of ceramics. The subsurface remains of prehistoric houses or village sites, and the attendant traces of nearby activity areas, fortification features, agricultural plots, and irrigation systems from the period are present in Texas, but are confined mostly to the northern, eastern, and western margins of the state. Ethnographic accounts from European explorers who ventured into the south Texas or Texas coastal areas during the sixteenth and seventeenth centuries also mention the existence of villages of crude structures, but at this writing there was little known archeological evidence for the existence of such structures (cf. Johnson 1997).

Many of the indigenous Texas Indian groups, including such long-term residents of the central Texas region as the Coahuiltecans and Tonkawas, continued to engage primarily in nomadic hunting and foraging well into historic times. This was the case in spite of the fact that some of their Late Prehistoric predecessors had begun the routine practice of horticulture or agriculture, and had apparently settled in permanent or nearly permanent villages by about A.D. 500. Archeological evidence has recently emerged that indicates that small permanent or semi-permanent villages were probably present in what is now central Texas as early as the Middle Archaic period (Johnson 1997). Shortly after the accidental introduction of horses into American Indian culture in the sixteenth century by the Spanish, bison-hunting became the way of life for many tribes on the Great Plains, where nomadism also continued. The Apaches and Comanches are the main southern plains tribes that invaded the central Texas area from the west and north during the 1600s and 1700s, displacing, absorbing, or exterminating many of the original inhabitants of the area (cf. Hester 1980; Newcomb 1961; Sjoberg 1953). They also frequently raided European-American settlements in or near the Texas Hill Country. During the eighteenth century, most of the surviving indigenous groups apparently fled to outlying regions or sought protection from invaders in the Spanish missions.

The Historic period in Texas began in the early sixteenth century (ca. 1528-1536). The first Spaniard, if not the first European, to set foot on Texas soil was probably Alvár Núñez Cabeza de Vaca. He was sailing the Caribbean with an exploratory Spanish expedition and was shipwrecked off the Florida coast in 1528. For about the next eight years, he allegedly wandered along the gulf coast, well into Texas, and finally arrived in Mexico in 1536. By that time, the Spanish had conquered and dominated many of the aboriginal cultures that occupied Mexico, Central America, and a sizeable portion of South America, and thus established a foothold of European-style civilization in those areas. During the period from roughly the second decade of the sixteenth century to the terminal seventeenth century, the Spanish colonized all of what is now Mexico to the Rio Grande. In 1691, an expedition of Spaniards from Mexico penetrated Texas to San Pedro Springs, now located in the northern portion of San Antonio's central business district. In an often-quoted report to the viceroy, explorer Domingo Terán de los Ríos related:

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We marched five leagues over a fine country with broad plains---the most beautiful in New Spain. We camped on the banks of an arroyo, adorned by a great number of trees, cedars, willows, cypresses, osiers, oaks and many other kinds. This I called San Antonio de Padua, because we reached it on his day [Terán de los Ríos 1691 as quoted in Crook 1967:1-2].

Fray Damian Massanet, also with the 1691 Spanish expedition, is cited by Crook as attesting that they encountered a very large tribe of Payaya Indians at that same location.

Several more preliminary expeditions into Texas were conducted by the Spanish during the next few decades. The landing of the Frenchman René Robert Cavelier, Sieur de La Salle, on Matagorda Island in 1684 and the subsequent activities of the French in Texas appear to have consolidated the resolve of the Spanish to colonize the region north of the Rio Grande. Some Spanish families had permanently settled in the vicinity of San Antonio by 1715 (Chabot 1936:8), and by 1718 the Spanish officially established the first settlement north of the Rio Grande near San Pedro Park. Called San Antonio de Padua, it consisted of a mission and a presidio based on agriculture employing Indian labor and irrigation. This subsistence base was used by the Spanish for virtually the entire time that they controlled the area.

The Spanish soon expanded their colony southward along San Pedro Creek and the San Antonio River, and by 1726, citizens of the crown numbered about 200 in the San Antonio area. In 1731, a party of about 52 additional settlers arrived from the Canary Islands and joined the fledgling colony. The Bexar County missions south of the present Alamo were imported during the mid eighteenth century from what were originally satellite locations in east Texas, and the relocation constituted a final impetus for Spanish settlement in the vicinity. The missions continued active throughout much of the remainder of the eighteenth century. With the beginning of secularization of the missions in the early 1790s came the granting of what had previously been the mission-controlled lands in Texas to Spanish citizens. By the end of the mission era, the indigenous Indians who were, presumably, descendants of the first human inhabitants of south and central Texas, had been virtually eradicated. Many of those who took refuge in the missions died of European-introduced diseases, and the hunting-gathering lifeways of the remnant populations radically disrupted by mission life and the trials of acculturation.

For many decades after the missions waned, the culture history of much of Texas continued to be dominated by their influences. Throughout the periods of Mexican and Texan independence, the U. S.-Mexican War, and until just prior to the Civil War, the subsistence base of the region was largely agricultural and local population growth was fairly benign. There were very few changes in land usage in the area throughout the reigns of several major imperial powers over almost a century and a half until the railroad and the Industrial Revolution came to the region (Fehrenbach 1978:114-117).

Due principally to the infusion of German culture into Texas, substantial changes in local land usage began to occur during the second quarter of the nineteenth century, and their affects lasted through virtually the remainder of the century. It is clear from the history of immigration in Texas that there were simultaneous appearances of significant numbers of several other ethnic groups, mostly of northern European origins, but German immigrants were remarkably talented and unusually tenacious settlers, organizers, builders, and commercializers in the Central Texas area. The Germans came early, quickly planted deep roots, and spurred much later development. As early as the 1830s, a few Germans had already migrated to Texas (Lich 1986:6). Substantial German colonization in Texas began in about 1845 with Prince Carl of Solms-Braunfel's founding of New Braunfels (Biesele 1930:119). During the next decade, the German settlements of Fredericksburg and Boerne developed in the Hill Country north of San Antonio. Contemporaneously, the Germanic population of San Antonio was on the increase and by 1876, according to the town assessor, totaled 5,630 Germans and Alsatians (Fehrenbach 1978:117).



The Germans settled principally along the Balcones Escarpment in central Texas. The Escarpment is the most prominent landform in the Central Texas region and has served as a transitional zone between broadly different lifeways throughout most of the Historic period: "Since earliest European settlement, the Balcones Escarpment stood as a cultural frontier, a dividing line between the farming economy of the coastal plain and the ranching economy of the Texas Hill Country. The Escarpment has greatly influenced the cultural development in the land which it transects [Palmer 1986:153]." Since about the beginning of the nineteenth century, and especially prior to the Civil War, the Escarpment has been the physical and cultural boundary between the Old South and the Old West. Before the coming of the Industrial Revolution to the area during the late-nineteenth century, the economy of the Old South was based primarily on the growing of cotton, while that of the Old West was based mainly on livestock production (Abbott and Woodruff 1986:Preface). Many German-American settlers were attracted to the escarpment region because of its general physiological similarities to certain portions of Germany, such as Bavaria.

## Local Historical Context

By the time of the STARS survey, the culture history of the Bexar County and San Antonio areas were well documented in both popular and technical literature of the nineteenth, twentieth, and twenty-first centuries (cf. Corner 1890; Fehrenbach 1978; Uecker 2007:4-16). A cogent summary of the history of the BP vicinity had been published by Houk (2002:17-20). This section focuses instead on the rich historical context, associations, and land use history of the survey area. The part of the area within BP was formerly known as Tannery Lots 8-10 and subsequently became known as Koehler Park. Much of the following subsections is adapted from and closely follows *Handbook of Texas Online* (Texas State Historical Association 2008a, 2008b).

### Upper Labor Farm and Acequia

During the Spanish Colonial Period (c. 1716-1821), irrigation in the area that later became the modern city of San Antonio was accomplished by construction and use of seven main ditches, called *acequias*, that were dug roughly parallel to San Pedro Creek and the San Antonio River (Cox 1999:317). Most *acequias* apparently were originally only a few meters wide and about one to one-and-a-half meters deep. Adjoining fields were routinely flooded by gravity flow through sluice gates, auxiliary ditches, and aqueducts. Some local grain mills, such as the one of twelfth-century Moorish design restored in recent years at Mission San Jose y San Miguel de Aguayo, were powered by *acequia* water, and the circuitous routes of several major San Antonio thoroughfares, such as North St. Mary's Street near the WTP project area, follow those of the *acequias* (cf. Cox 2005:1-9).

Archeological investigations and associated archival and historical background research conducted from about 1968 to 2004 revealed important information about construction and use of local *acequias*, and proved that buried traces of those *acequias* often survived along historically mapped routes beneath later improvements (cf. Cox 1993, 1995, 1999, 2005; Fox 1985; Fox and Cox 1991; Henderson and Clark 1984; Nickels et al. 1996; Schuetz 1970; Uecker 2004). Such research also revealed that segments of some *acequias* were lined with stone, clay, plaster, or wood, or were covered with wood or metal sheeting, and that regular use of several of the Spanish *acequias*, most of which were originally earthen lined, continued after the end of Spanish rule in 1821 until the early to mid twentieth century.

Apparently the WTP project area was part of the Upper Labor Farm irrigated by the Upper Labor Acequia that extended through the area (COSA Public Works Department 2002). According to Cox (2005:71), the acequia was actively used in that vicinity from Spanish times until about 1880, when it was filled, but in 1935: "...during a Works Progress Administration rockwork project in Brackenridge Park and San Pedro Springs, the headgate and approximately 1,500 feet of the Upper Labor Acequia's discharge channel was reconstructed. A portion of the channel above the old Water Works waterway and a segment in the waterfowl area of the San Antonio Zoo were also rebuilt, though few zoo visitors realize their historical significance [Cox 1995:72]."

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A fairly comprehensive and well-documented history of the area from late Spanish times until the formation of the SAZ and BP appears in Uecker et al. (2004:17-22), the highlights of which are:

In 1762, Governor Angel Martos y Navarete ordered selection of an access for a new acequia to be established west of the San Antonio River for the purpose of irrigating new farm land to be known as the Upper Farm. The site chosen for the weir was two-and-one-half miles upstream from the town near the springs of the San Antonio River. However, the project languished until 1776, when Governor Ripperda issued orders that participants share expenses to clear land and create a 1.75-mile-long acequia for the new fields ... ... The participants were Canary Island descendants... ... Most of the recipients had been brought from Los Adais in east Texas for re-settlement in the south-central Texas area. The families who did not return to east Texas with Gil Y'Barvo were awarded lands in the Upper Labor.

Distribution of land and water rights..... began in April, 1777.....The land was divided into 26 suertes [Figure 3], and each suerte included the right to one day of water, with the participants drawing numbers for the plots. Each suerte extended as a long and narrow tract from the acequia on the west to the San Antonio River on the east.....After distribution, each new owner cleared the land for field crops...

Because Mariano Rodriguez was granted the portion nearest to Alsbury Springs, where the San Antonio River met the Upper Labor Ditch, he claimed all the intervening land. He constructed and maintained a bridge on the river just below the dam that diverted water into the ditch, strengthening his claim on the commons area. In 1798, Pedro Flores acquired part of the Mariano Rodriguez land, the southern portion of which later became the Brackenridge Polo Field.

Pedro Flores' Acquisition of the Upper Labor Suertes

During the early to mid nineteenth century, Pedro Flores.....continued to acquire adjoining suertes to the north and to the south, and the family held nine suertes by 1863. Between 1840 and 1860, Flores individually became administrator for several of the descendants of the initial owners of Upper Labor suertes. By gaining control of so many suertes of the Upper Labor area, Flores also acquired rights to much of the commons between the northernmost suerte and San Antonio Springs.

The commons included land on the north and south sides of today's East Mulberry Street where the street crossed the Upper Labor Ditch and the San Antonio River channel...

Confederate States of America Manufacturing Plan

In late 1862, the City of San Antonio and Pedro Flores had a dispute regarding the ownership of the land adjacent to and north of the original Mariano Rodriguez Suerte acquired in 1798 by Pedro Flores......In settlement of the issue, both the City of San Antonio and Pedro Flores deeded 75 acres.....which included the acreage in dispute, to the Confederate States of America (CSA) for a manufacturing facility. From the springs southward, the portion west of the San Antonio River and east of the Upper Labor Ditch became part of a tannery operation.

CSA contractors constructed a manufacturing plant and tannery and began to alter the water system from the springs to the various acequias stemming from the water source. Since 1863 was a drought year, the citizens of San Antonio became concerned over the loss of water and the activities of the contractors. In 1864, the city filed an injunction to stop contractors



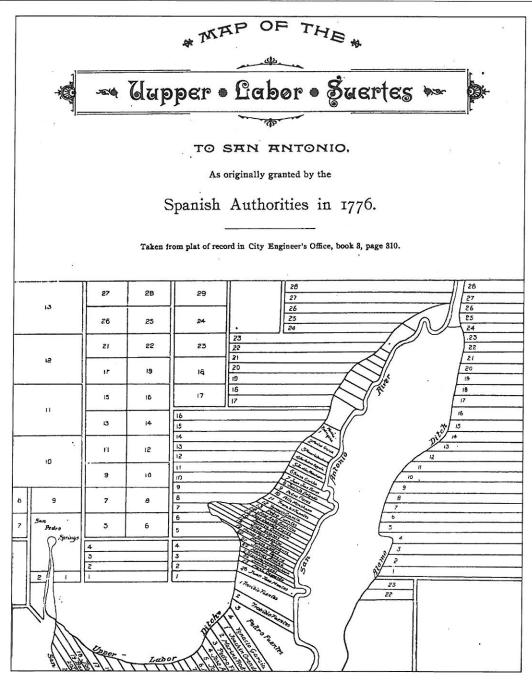


Figure 3. Suertes in the Upper Labor in 1776. On this map, the WTP project area apparently is near Suertes 24 or 25.

Note Upper Labor Ditch on the west, Alamo Ditch on the east, and the San Antonio River between the two ditches. Copy provided courtesy of the COSA Engineer's Office.

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Washington and Friesenhawn from working on the Alsbury Springs or Main Springs of the San Antonio River. The contractors responded that they had deepened and widened the river channel and created a new dam on the land then identified as 77 acres. They had channeled water from the principal springs into the west acequia, or Upper Labor Ditch, by building a new dam and diverting the water from the old channel into the new channel.

The contractors accused city authorities of previously closing the old channel of the San Antonio River by a dam or obstruction and preventing water from flowing from the main channel through the old ditch. The old river channel appears to have been closed by the city at an earlier date. Due to the drought, the Alamo Ditch had only a small amount of water. The contractors prevailed and developed the tannery so that 6,000 hides could be simultaneously processed. A mill for cotton and wool operated by water power also produced hats and cotton cards. Salt was also reported to be a byproduct of the enterprise. The close of the Civil War ended the dispute with the city and the enterprise. During Reconstruction, the city petitioned the Union authorities for a deed to the 77 acres previously sold to the CSA and received it by 1869.

Tannery Plat of Lots 1-10 in the Upper Labor

In 1874, the city ordered a survey by John Bobbin to divide the former CSA manufacturing land into ten tracts varying in size from three to seven acres and City Attorney George Brackenridge purchased the tracts. Brackenridge agreed to remove the dam constructed by the CSA contractors near the mouth of the spring in 1863, and to close a 20-vara-wide street on both sides of the San Antonio River in exchange for opening a street of the same width along the south line of the Water Works Company land. The new thoroughfare opened by Brackenridge was Josephine Street...

Within a few years, Brackenridge became a major stockholder in the Water Works Company, which conducted its operations just south of the former CSA manufacturing site. In 1899, Brackenridge donated about 199 acres to the city for Brackenridge Park.....Immediately following his purchase of the tannery tract from the city in 1874, Brackenridge sold Lots 1-10 to various citizens.

Tannery Plat of Lots 8, 9, and 10

On June 27, 1883, Lots 8, 9, and 10 were sold by Brackenridge to Helen Madarasz...

By 1880, Helen Madarasz and her two sons had developed the Ilka Nursery on Lots 8, 9, and 10, and were selling cut flowers, potted plants, and trees. The property had a Rose Greenhouse, a Carnation House, a barn, and four or five rent houses for the help. Helen also lived on the property, renting part of her home to a railroad engineer from New York and his wife... Specific records indicate that in 1880, Helen Madarasz, age 44, and a native of Hungary, was living on Tannery Lots 8, 9 and 10, and was helping her two sons run the Ilka Nursery. Five rent houses on the property were occupied by employees who were from Kentucky, Virginia, Germany, and Mexico...

Helen Madarasz apparently signed a Bond for Title for the three Tannery Tract lots prior to 1880, and received her first deed in 1882, and a second deed in 1883, from previous owner George W. Brackenridge... ...Brackenridge had purchased the lots in 1881 from banker and steamship representative J. S. Lockwood. Lockwood and business partner James Manney had acquired the land from the city in 1875...



Within ten years after Helen's receipt of these deeds, her son William L. Madarasz became the proprietor of Ilka Nurseries, which advertised roses as a specialty. The expanding nursery was located on Rock Quarry Road at the San Antonio Springs and had a retail outlet at the City Stand and Depot at 309 East Houston Street. The Ilka Nursery also grew a limited supply of evergreens, as well as ornamental and flowering shrubs in pots... ... William also worked as a bookkeeper at George W. Brackenridge's San Antonio National Bank.

By 1894, William deeded his interest in the nursery business to his mother and moved to New York City to continue his banking career... ... Helen died in July, 1899, and her estate, including the nursery plants and land, was sold in 1901 to the owners of the San Antonio Brewing Association via S. G. Newton... ... The brewing association, headed by Otto Koehler, deeded the property to Emma Koehler in 1915, after which Emma created Koehler Park. In response to Brackenridge's 1899 and 1915 deed restrictions prohibiting the sale of alcoholic beverages in Brackenridge Park, the city agreed to allow beer to be sold within Koehler Park... [Uecker et al. 2004:17-22].

#### San Antonio Zoo

In 1910, San Pedro Park in San Antonio housed a private collection of small animals. In 1914, George W. Brackenridge donated a few elk and buffalo for public display in Brackenridge Park. In 1928, the San Antonio Zoological Society, a nonprofit organization, was established to purchase animals to be housed adjoining Brackenridge and Koehler parks on a 51-acre tract of land from a Spanish grant that belonged to the city. The site had been a rock quarry, and the resultant limestone cliffs provided a natural habitat for the animals. The San Antonio River flowed through the area, and an extensive canal system was developed using its water.

The zoo opened in 1929 with 344 specimens in the collection, including 72 white-tailed deer and 67 ring-necked doves. The collection now comprises more than 3,000 animals representing more than 700 species. The society oversees building, maintenance, and purchases of the animals; the city provides the land and continues support. The SAZ is the only one in the world that exhibits the endangered whooping crane, the giant armadillo, and the shoebill.

The first white rhino born in the New World was born in the zoo in 1972. Many endangered species are exhibited and propagated at the zoo, including golden lion tamarins, black rhinos, Grevy's zebras, scimitar-horned oryx, and sable antelope. The zoo features an innovative children's zoo, in which a boat ride passes by islands representing different parts of the world and exhibiting animals native to each region, and an education center where programs are offered for visitors of all ages.

Otto and Emma Koehler and Pearl Brewing Company

This subsection closely follows Handbook of Texas Online (Texas State Historical Association 2008c).

The Pearl Brewing Company in San Antonio started in 1881 as the J. B. Behloradsky Brewery (1881-83). The Behloradsky Brewery was purchased in 1883 by a group of San Antonio business leaders that formed the San Antonio Brewing Association. The brewery was renamed the San Antonio Brewing Company (1883-88) and began producing Pearl Beer in 1886. In 1888, the name was changed to the San Antonio Brewing Association (1888-1918). The Pearl name came from a German brewmaster who thought the bubbles in a freshly poured glass of beer resembled pearls and he called them "Perlen." The San Antonio Brewing Association purchased the formula and name from the Kaiser-Beck Brewery in Bremen, Germany.

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In about 1902, Otto Koehler, manager of the Lone Star Brewery in San Antonio, became the president and manager of the San Antonio Brewing Association. Koehler remained president until his death in 1914. His wife, Emma, succeeded him as the chief executive. Under Koehler's direction the original pioneer brewery was replaced by a larger modern establishment. Production was gradually increased to 6,000 barrels per year. In 1889, five 135-barrel tanks were installed by the Pfaudler Company, and by 1916, Pearl was the largest brewery in Texas, with a capacity of 110,000 barrels per year.

The San Antonio Brewing Association was the only brewery in San Antonio to survive prohibition, due in large part to the hard work and determination of Emma Koehler. Mrs. Koehler kept it going during those lean years by producing near beer, bottling soft drinks, entering the commercial ice and creamery businesses, and operating an advertising sign company. Within fifteen minutes after prohibition ended in Texas on September 15, 1933, 100 trucks and 25 boxcars loaded with Pearl beer rolled out of the brewery grounds. In 1952, the San Antonio Brewing Association changed its corporate name to the Pearl Brewing Company in an effort to more closely associate itself with its product.

### Brackenridge Eagle

A segment of the route of the Brackenridge Eagle miniature train passes through the project area. The following information about the train is excerpted from the official internet website of the SAZ:

Since 1956, the Brackenridge Eagle has chugged along the miniature tracks skirting the banks of the San Antonio River, as it made its way through one of San Antonio's most popular parks. Generations of Brackenridge park visitors have ridden-the-rails past the San Antonio Zoo. It has braved several derailments, a couple of collisions, and even a modern-day train robbery during the summer of 1970. On June 15, 2001, the San Antonio Zoo assumed the management and operation of the miniature train [SAZ 2008].

### Work Projects Administration

This subsection closely follows Handbook of Texas Online (Texas State Historical Association 2008d)

The Work Projects Administration (WPA) was originally named the Works Progress Administration when it was established as a national agency on May 6, 1935, by an executive order of President Franklin D. Roosevelt. Several of the HBSO studied were constructed by the WPA during the 1930s. Harry Hopkins, who had been chief of the Federal Emergency Relief Administration (FERA) and the Civil Works Administration (CWA) during 1933 and 1934, was appointed head of the new WPA, which succeeded these organizations. The name of the agency was changed to Work Projects Administration on July 1, 1939, when it was made a part of the Federal Works Agency, but its continuity was unbroken and the purposes of the WPA remained the same. It was established as a relief measure during the Great Depression and lasted until it was phased out in 1943, after it was rendered unnecessary by increased employment and reduced relief rolls.

Prior to the WPA, the problems of unemployment in Texas had been faced by Governor Miriam Amanda Ferguson, who issued an executive order establishing the Texas Relief Commission in March, 1933. The commission used FERA funds, enabling Texans to participate in various early New Deal programs such as construction and white-collar projects of the Civil Works Administration (CWA) and the camp programs of the Civilian Conservation Corps (CCC). One CWA program, the Public Works of Art Project (PWAP) of 1933-34, employed dozens of Texas artists in the decoration of public buildings, but the program was not administered by the Texas Relief Commission.



Due to the PWAP administrative procedures under the United States Treasury Department, payrolls were routed through federal customs officers in the 16 CWA regions, and expenditures were authorized by the federal government. The FERA, under which these projects had been organized, was discontinued in December, 1935. Prior to that, in July 1935, Texas had established an administration in San Antonio, directed by H. P. Drought, to coordinate WPA activities. The WPA functioned in Texas until after unemployment had begun to fall off sharply in 1942. The phase-out was completed in 1943, and the final report of state administrator Drought was written in March of that year.

Under the WPA, 600,000 persons in Texas were helped to provide subsistence for themselves and their families. According to its regulations anyone employed by the WPA had to be the economic head of his family and had to be certified as destitute on the rolls of the Texas Relief Commission. People of both sexes and of all races were employed. WPA wages in Texas ranged from 45 to 75 dollars per month. Peak employment under the Texas WPA program was 120,000 persons in February, 1936. This figure perhaps reflects the level of administrative efficiency at that time rather than the need for employment, since the peak caseload of the relief commission came later, in February 1939, when 218,291 of the unemployed were on relief rolls.

Soon after that time, in September 1939, the name of the state relief organization was changed by legislative act to the State Department of Public Welfare. State WPA administrator Drought blamed the increase in caseload in 1939 on widespread crop failure in Texas in that year. The caseload remained high from 1939 through 1942, always staying between 120,000 and 150,000, while the number of workers employed by the WPA was never more than half of the caseload figure. The biggest drop in caseload in Texas did not come until the period February-October 1942, when a reduction of 75 percent occurred, with a proportional drop in WPA employment. The major reason for a worker's leaving WPA relief employment was that he found other work, although some were forced off by lack of project funds. The 1942 drop in Texas WPA employment was undoubtedly due to the increase of business activity following United States entry into World War II.

Activities of the Work Projects Administration in any given area of the country were dependent on the needs and skills of the persons on relief in that area, since the main prerequisite for WPA employment was one's certified relief status. In Texas this had the effect of limiting projects in the arts. There was only one attempt at a theater project, which lasted only a month. There were no programs in painting or sculpture. This fact is deceptive, however, since Texans were being employed by the Treasury Department's relief art project and section of fine arts during approximately the same period that the WPA was in effect. At least 70 separate mural projects were carried out by Texans under these two projects.

The WPA activities in Texas were varied. As its art project, the state conducted an excellent survey of folk art objects for the Index of American Design. There were so few artists on relief rolls that better-than-average craftsmen had to be employed and trained on the jobs. The objects were listed and pictorial records were made of them. The original plates for this index are on deposit at the National Gallery of Art in Washington, D.C. The WPA Archeological Survey studied the Indians of Texas. This study entailed the finding, mapping, and excavation of 50 archeological sites, including Indian villages, camp sites, and burial mounds; collection of artifacts from these sites; and analysis of all data gathered. In the paleontologic-mineralogic survey, WPA workers, again under the supervision of professional scientists, worked many sites in Texas for fossils, mineral resources, and combinations of both. As war requirements increased, work focused on discovery and investigation of minerals, especially location of road materials and mineral resources designated as strategic.

The Federal Music Project in Texas consisted of the organization of groups of musicians into ensembles of various sizes, including dance bands, a Mexican folk group, and two Latin-style orchestras. The program also included teaching in CCC camps, in underprivileged parts of three metropolitan areas, and in public schools having no musical curriculum. A broad adult-education program was instituted to provide instruction in such basic areas as literacy and citizenship, in vocational training and home economics, and in foreign languages and other academic

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subjects. Programs designed primarily to answer the needs of unemployed women were a child protection program, for training in the care of preschool children; a clothing program, for the operation of shops that trained workers to make and repair garments and shoes for free distribution to the needy; a feeding program, which included storage and distribution of relief food, as well as the provision of school lunches, matron service, gardening, and food preservation; a housekeeping aid program, which trained women to fill positions as domestic workers and provided emergency aid in home services; and a health service program, which provided training and personnel for work in health agencies and institutions.

The American Imprints Inventory employed library workers and supervisors, first as a part of the Texas Historical Records Survey program and later in cooperation with the library service program. This inventory included books, pamphlets, broadsides, broadsheets, maps, newspapers, and periodicals in public, semipublic, and private collections in the state for the period from the beginning of printing into the nineteenth century; it calendared or transcribed three major manuscript collections. Copies of these materials were deposited at the University of Texas and other institutions. This program also included compilation of a list of all libraries in Texas. Other archival and literary programs were the research and records programs, which provided clerical labor to public agencies for the installation or improvement of records systems; the library training program, which covered every phase of library science; and the library service program, which gave support in labor, funds, or technical knowledge to all types of libraries in Texas. Perhaps the best known was the Texas Writers' Project, which conducted large-scale research into the state's cultural history and its geographical points of interest. This work resulted in many publications, including several state and local guides to Texas. All manuscript materials from the writers' project were deposited in the University of Texas at Austin archives.

The greatest single area of WPA public spending in Texas was construction. As in most of the other WPA projects in Texas, one-fourth of the construction costs had to be provided by sponsors. This was a regulation imposed by the Texas WPA administrators, there being no federal requirement for matching monies. Construction projects included parks, swimming pools, highways, bridges, stadiums, and other public buildings. Recreational facilities were increased, but recreational leadership and organizational help were also boosted under the WPA. An attempt was made to provide leisure-time activities for persons of all ages, races, and economic groups during all seasons of the year. The WPA in Texas built and organized pre-school play centers, playgrounds, community recreation centers, toy loan centers, athletic leagues, boys' clubs, girls' clubs, and, during the period of World War II, centers for all branches of armed forces personnel. All recreational programs were begun with the idea of establishing permanent facilities.

#### Soils

According to the Soil Survey of Bexar County, Texas (Taylor, et al. 1966:Sheet 45), the principal surface soils in non-riparian zones of the project area were classified as Lewisville silty clay (LvA) and those along the banks of the San Antonio River were part of the Frio component of the Trinity and Frio soils (Tf). Lewisville silty clay generally occurs as nearly level, broad terraces along rivers and creeks. Trinity series soils are deep, dark, calcareous clays that range in texture from clay loam to gravelly clay and that typically occupy bottomlands that are frequently flooded. They are usually derivatives of the surrounding upland soils. Because they are ideal for cultivation, Trinity series soils were farmed intensively during the historic era wherever they were present in Bexar County and surrounding areas. They frequently contain pockets of Venus Clay Loam (Vcb) and Houston Black Clay (HtA).

Similar soils were previously documented during geoarcheological work at the Alamodome development site and at several other locations in the eastern portion of downtown San Antonio (cf. Collins 1997:151-157). At those locales, which are just a few kilometers south of the WTP project area, the soils are generally about 2-3 m deep and rest above very ancient deposits of caliche-laden gravels. In several profiles of this type observed by the Principal Investigator, columns were comparatively uniform in composition, the upper dark clay deposits had



virtually no visible inclusions and were readily distinguishable from the light-colored caliche gravels below them, and no cultural evidence was present.

According to Collins, the upper, dark-colored clays are very turbaceous and extend several meters to the bottom of the Holocene deposits. Thus, prehistoric archeological resources, which are found only rarely within such soils, are almost always poorly preserved due to the high shrink-swell and particle migration characteristics of the deposits. Collins (1997) further asserted that, because these soils are so turbaceous, accurate dating of archeological resources found within them is usually not possible unless time-diagnostic artifacts are found in good associations with those resources. Based on the established ages of similar soils in the region, he speculates that the dark clays above the caliche gravels are of Holocene age and the caliche gravels are of Pleistocene vintage.

This description is generally supported by data on file in the THC's *Texas Archeological Sites Atlas*, some of which indicates that sites only a few kilometers from the WTP project area, and within generally similar geomorphic contexts, contained artifacts of apparent Middle to Late Archaic age (cf. Maslyk 1994). It is further supported by the observations of the Principal Investigator at such sites.

Natural soils encountered by the STARS survey team closely matched such descriptions.

## Scope of Work for the Initial Survey Effort

When the survey was requested, SAPAR was proposing to install a WTP. The project area was about one acre and extended along and about 100 feet to each side of the center line (about 200 feet long) of the existing drainage between the SAZ capybara pen to the north and the San Antonio River to the south (Figure 2). Design and siting of proposed improvements were not yet firmly established. It was believed that the project would at least include construction along the existing drainage channel of a main plant building about 20' x 14' in plan configuration and about 14' tall, substantial modifications of the channel near the new building, and installations of associated pipelines. It could also include other improvements and related ground disturbances across the rest of the project area. The initial survey was intended to investigate and evaluate the archeological potential of the entire project area to the extent feasible at that level of effort and considering that about 70-80 percent of the surface was already covered in improvements. Most of those improvements were believed initially to have originated during the mid to late twentieth century and were not slated for removal or modification in conjunction with the project.

The San Antonio Zoo and vicinity are rich in archeological resources and contain numerous previously discovered and recorded prehistoric sites. For example, a State Archeological Landmark site, 41BX323, which is a few hundred meters east of the WTP project area and in a similar geomorphic setting along the San Antonio River margin, was tested in 2001 by SWCA, Inc. (2002), and found to contain prehistoric archeological deposits to depths of about two meters below the surface. The oldest of those deposits originated during the late Paleoindian period of local culture history. Investigations along the river margin at 41BX264 in 2003 by STARS found 39 discrete prehistoric hearth features randomly distributed across about a quarter acre at an average depth of about a meter. The site is a few hundred meters south of the subject project area and the features originated during the middle Archaic Period.

Such previous finds implied that the current project area could contain cultural deposits or features of prehistoric origins to depths of as much as a meter or two below the surface. However, it was also possible that much or all of the natural topsoil within the area was removed or disturbed during prior constructions, and/or that if any prehistoric archeological deposits with appreciable research potential survived, they were relatively shallow and isolated.

An important thrust of the initial survey effort was to determine whether or not well preserved archeological deposits might be present below the shovel testing range (about 1-1.5 meters). If shovel testing in the



existing yard areas had revealed that such deposits might extend past that range, then either backhoe trenching prior to construction ground disturbances or monitoring of such disturbances would likely have been recommended for a future phase of work. Conversely, if viable shovel testing was able to be done throughout the yard areas and reached caliche or limestone bedrock in most cases, and if the results of all tests were negative or negligible in terms of encountering cultural resources, then neither further archeological work prior to construction nor monitoring during construction would be warranted or recommended. Therefore surface exam and archeological shovel testing for the survey were done only in the current yard areas. Because of the potential to damage existing improvements, landscaping, and any thin Late Prehistoric or Historic-period cultural deposits that might have been near the surface, backhoe trenching was not included in the initial phase of work.

#### Methods and Results

In the few places where soil was present and exposed at the surface within the project area, conventional pedestrian visual surface examination was performed on transects only about a meter or two apart. In addition, seven archeological shovel tests and four shovel probes were excavated and documented in yard or landscape bed areas throughout much of the project area (Figures 2 and 4; Table 1). Each shovel test or probe was about 30 centimeters in diameter. With only a few exceptions, tests averaged about 60-70 centimeters in depth. Tests were dug and recorded in arbitrary 10-centimeter unit-levels, and where feasible based on soil type and consistency, excavated matrix was screened through quarter-inch-mesh hardware cloth. When screening was not practical due to the density or moisture content of clayey soils, excavated matrix was troweled through and carefully examined for the presence or absence of cultural evidence. All tests were dug to the maximum depth practical by non-mechanized means.

From the surfaces downward, matrix encountered in Tests 1-6 and 8 consisted of about 20 centimeters of dark-gray-brown to medium-gray-brown (about 10YR3/2 to 10YR4/1) clays and clay loams with many limestone gravels or pebbles and a few small limestone cobbles, over imported (modern artificial) caliche or crushed limestone base material or rubble fill about 20 cm thick, over natural Houston Black clay (very dark gray color and greasy consistency) with no visible inclusions. All but the lowest (Houston Black clay) levels were able to be screened through quarter-inch-mesh hardware cloth. Matrix excavated from lower levels was troweled through. In each of the deepest of the tests (1-3), which were dug just a few meters from the river's edge, water or water-saturated soil was encountered at depths between about 80 and 90 centimeters below the surface. Hard limestone or densely-packed limestone rubble, which was impenetrable by non-mechanized excavation methods beyond about the 15-20 centimeter level, was encountered in tests 7 and 9-11. Therefore those tests were relegated to the status of probes to verify the presence of non-penetrable materials at shallow depths.

With the exception of finds of a few scraps of modern trash, such as fragments of hard plastic tableware, chewing gum wrapping paper, flexible plastic plant tie ribbon, and similar items at or near the surface, the results of the surface examination and of all tests were negative in terms of encountering archeological evidence. Nothing was collected or curated in conjunction with the survey.

### Interpretations and Recommendations

Based on finds of imported crushed limestone fill in many of the shovel tests, it was obvious that the upper portions of most, if not all of the project area were in years or decades past removed down to natural caliche or clay, which very probably originated prior to human presence in the vicinity, according to the local and regional geoarcheological record. Apparently fill was then imported into those areas and spread to establish a new artificial grade level. It's likely that any cultural deposits in the vicinity were severely damaged or destroyed during these activities.





Figure 4. Clockwise from top left: Shovel Tests 1, 2, 4, and 6, in progress.

Since nothing of archeological significance was found, the Principal Investigator recommended to the THC, the COSA Historic Preservation Officer (HPO), and SAPAR that the proposed WTP project as planned at the time of the survey should proceed without further archeological work. It was also recommended that, per applicable historic preservation statutes, construction work should be suspended in the vicinity of any finds of archeological evidence unearthed or exposed by construction activities until the finds are examined by the Texas Historical Commission, the HPO, and/or a qualified professional archeological consultant.

Several historic buildings, structures, or objects (HBSO) that appeared to be eligible or potentially eligible for listing in the National Register of Historic Places were within, partly within, or immediately adjacent to the project area. A study of the visual effects of the project to those and other HBSO within a qualitatively-defined, human-scale view shed that included the project area and vicinity was being performed for SAPAR by STARS at the time of the STARS cultural resources survey. The following information about a few examples of these HBSO was gathered during the visual effects study. After completion, the study report, including documentary photographs of these and the other HBSO studied, and preliminary assessments of eligibility and effect, will be forwarded to the THC History Programs Division for review and comment according to applicable historic preservation statutes and regulations. Therefore more detailed information about these HBSO is not included in this report.

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### Table 1. Shovel Test/Probe Data

| No  | Туре  | Depth | Descriptions   |
|-----|-------|-------|--|
| 1   | test  | 90 cm | ~30 cm 10YR3/2 dark gray clay or clay loam/Houston Black clay to water at 90 cm    |
| _ 2 | test  | 85 cm | ~30 cm 10YR3/2 dark gray clay or clay loam/Houston Black clay to water at 85 cm    |
| 3   | test  | 80 cm | ~30 cm 10YR3/2 dark gray clay or clay loam/Houston Black clay to water at 80 cm    |
| _ 4 | test  | 70 cm | ~20 cm 10YR3/2 dark gray clay or clay loam/ ~20 cm caliche fill/Houston Black clay |
| 5   | test  | 60 cm | ~20 cm 10YR3/2 dark gray clay or clay loam/ ~20 cm caliche fill/Houston Black clay |
| _ 6 | test  | 80 cm | ~20 cm 10YR3/2 dark gray clay or clay loam/ ~20 cm caliche fill/Houston Black clay |
| 7   | probe | 10 cm | ~10 cm of 10YR4/2 clay or clay loam over indurated caliche bedrock                 |
| 8   | test  | 80 cm | ~20 cm 10YR3/2 dark gray clay or clay loam/ ~20 cm caliche fill/Houston Black clay |
| 9   | probe | 15 cm | ~15 cm of 10YR4/2 clay or clay loam over hard limestone bedrock                    |
| 10  | probe | 10 cm | ~10 cm of 10YR4/2 clay or clay loam over indurated caliche bedrock                 |
| 11  | probe | 20 cm | ~20 cm of 10YR4/2 clay or clay loam over hard limestone bedrock                    |

Table notes: No cultural evidence was found during shovel testing. See Figures 2 and 4 for locations of tests within project area and photographs of tests.

### HBSO Example 1: Old Zoo Restrooms

Location and Description: This is a single story, two-part, wooden building within the SAZ consisting of two square rooms joined by a covered patio area. Both parts are covered by horizontal, wooden siding painted a cream white with green trim. The hipped roof of each building part is clad in red ceramic, Roman-style tiles. The foundation is concrete. Each room opens to the outside from the covered patio area. It is only about 40-50 feet west of the site of the proposed WTP main building.

Current Use: This HBSO was the design studios for Felix Saucedo, Chief Exhibit Designer for the SAZ. Mr. Saucedo informed the Principal Investigator that he converted this building into his design studio after 1979.

Prior Use: In 1979, the building is shown as restrooms on the Brackenridge Park Master Plan (CGR, Inc. Architects, Engineers and Planners 1979:29). One section was the men's restroom and the other was the women's. According to Mr. Saucedo, this building was the original set of restrooms for the SAZ. No documentary evidence about this HBSO was discovered during the study. However, the architectural details of the building and the construction materials, such as the horizontal wooden siding and tile roof, are consistent with the other WPA-era structures studied, implying that this HBSO originated during the 1930s as well. Careful scrutiny of a 1939 Tobin aerial photograph of BP revealed what appears to be the roof of the building (Tobin International, Ltd. 1939).

Preliminary Assessment of Historical Significance: The Principal Investigator believed the building is historically significant at a local level under NR Criterion A (association with an event or pattern of events important in the history of a community) because of its association with the early history of the San Antonio Zoo (established in 1928 by the San Antonio Zoological Society), and for its association with the SAZ WPA improvements project (Martin 2006:A-6). The building is also apparently significant at a local level under NR Criterion C (type or method of construction) for its architecture. Its interesting mix of ceramic building tiles as a roofing material and retention of horizontal wooden siding, make it somewhat unique.

When examined by the Principal Investigator, it appeared relatively unaltered, except for the careful removal of its interior plumbing fixtures, and retained a high degree of architectural integrity. In the opinion of the Principal Investigator, it could be eligible for NR listing and/or city landmark designation, either individually and/or as a contributing property to a potential SAZ NR Historic District and/or COSA historic district.



#### HBSO Example 2: Picnic Pavilion/Train Station

Location and Description: This rectangular, open stone structure in BP has open roof framing showing exposed steel rafters covered by chain link (Figure 5). GPS measurements indicated that it was about 123 feet south-southwest of the site of the proposed WTP main building. Door and window frames are empty. The structure has covered pergolas on its east and west ends with wooden decks for flooring. The central stone part of the pavilion has been stuccoed and painted pink. Its window openings apparently were enlarged and modified and its parapet is edged with terra cotta tiles. The architectural style of the building is Spanish Colonial Revival, evinced by the color of the structure and the tiles at the roof line. It appeared to have been substantially altered.

Current Use: The structure and adjacent pergolas were being used as a picnic pavilion.

Prior Use: The original use of the building was not revealed by the study. It appears in the 1939 aerial photograph of BP and therefore could be of WPA vintage. Also, there are interesting visual similarities between it and the "Hippopotamus building" featured in a San Antonio Light photograph published May 13, 1936 (San Antonio Light 1936), and found in the San Antonio Light Photograph Collection at the University of Texas at San Antonio's Institute of Texan Cultures. The small, centered attic vents, parapet edging with terra cotta tiles, and thick stone walls make it nearly a twin of that WPA-era building. Regardless of any unresolved questions about HBSO 2's use before 1956, the Brackenridge Eagle miniature train began operation in BP in that year, and apparently the building was subsequently used as a station or stop for the train for an undetermined duration.

Preliminary Assessment of Historical Significance: The Principal Investigator believed that, despite some severe alterations, the building may retain enough integrity to be historically significant under NR Criterion A (association with an event or pattern of events important in the history of a community) because of its probable close association with the SAZ WPA-era and for its later association as a possible station or stop for the Brackenridge Eagle miniature train. Also, its proximity to the SAZ water discharge channel adds to its potential importance because the channel was probably associated with the SAZ WPA improvements project. It could be eligible for NR listing and/or city landmark designation, either individually and/or as a contributing property to a potential BP/SAZ NR Historic District and/or COSA historic district.



Figure 5. View southward of front (north) façade of HBSO Example 2.

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### HBSO Example 3: Zoo Water Channel into San Antonio River

Location and Description: This HBSO is a gently meandering, relatively shallow and narrow, concrete-lined channel from the Capybara tank on the SAZ grounds to the San Antonio River in BP to the south (Figure ). It is about 180 feet long and averages about 10 feet wide and three feet deep. When inspected during the study, its water was cloudy and part of it was filled with water plants. Close to the sides of the channel at it confluence with the river are two massive cypress trees. Several crossings traverse the channel: an asphalt-paved vehicle bridge across Old St. Mary's Street, a bridge for the miniature railroad tracks, and three native limestone-style pedestrian bridges. Edging the St. Mary's Street bridge on the south is some unusual stone work that is similar to that used in Ray Lambert's Sunken Gardens Lily Ponds, which date from 1917-1918. Also helping to date this channel is the fact that it is clearly visible in the 1939 Tobin aerial photograph of the area, and a telling passage in Cox's book on San Antonio's acequias:

... in 1935, during a Works Progress Administration rockwork project in Brackenridge Park and San Pedro Springs, the headgate and approximately 1,500 feet of the Upper Labor Acequia's discharge channel was reconstructed. A portion of the channel above the old Water Works waterway and a segment in the waterfowl area of the San Antonio Zoo were also rebuilt, though few zoo visitors realize their historical significance [Cox 1995:72].

Current Use: The channel was used to drain the SAZ of waste water from the animal pens.

Prior Use: The channel's original use or its relationship to the nearby WPA-era Picnic Pavilion was not clearly revealed by the study. Its proximity to the historic route of the Upper Labor Acequia and the San Antonio River suggests that it might have originally been a desaguay, a special channel built as part of the acequia system to return water to the river.

Preliminary Assessment of Historical Significance: The Principal Investigator believed that the channel is a historically significant structure and site according to NR Criterion A (association with an event or pattern of events important in the history of a community) due to its probable integral association with the BP/SAZ WPA-era improvement project. According to Cox, the Upper Labor Acequia's discharge channel was rebuilt. The channel is also significant because of its possible association with an even earlier history when this part of BP was still known as Koehler Park. Koehler Park was an 11-acre park in the heart of BP. It was named in memory of Otto Koehler, manager of Pearl Brewery, by his widow, Emma Koehler, when she donated the parcel to the city in 1915. HBSO 11 could be eligible for NR listing and/or city landmark designation, either individually and/or as a contributing property to a potential NR Historic District and/or COSA historic district for BP or for Koehler Park.



Figure 6. View northward of HBSO Example 3.



#### HBSO Example 4: Koehler Picnic Pavilion

Location and Description: This is a large, open-air, open-frame, rectangular wooden building in BP with a standing-seam, metal roof supported by attractive, open truss work (Figure 7). GPS measurements indicated that it was about 195 feet south-southeast of the site of the proposed WTP main building. Siding is horizontal and painted a cream white. The skirt is faced with cream colored stone. On the eastern façade is a plaque reading, "Works Progress Administration 1935-1937." However, the building may predate this plaque as the stone work is hard to date.

The building's architectural style is Rustic and it appears to predate the WPA-era. It seems reminiscent of the style of some of the earlier buildings in our National Parks system and their open-truss lodges and simple pavilions. Emma Koehler donated land for Koehler Park in 1915, so the building may date from the 1920s or a little earlier. The building's horizontal siding is similar to that of the original SAZ restrooms (HBSO Example 1), and the two buildings may be from the same era. The historical appendix to the Mahncke Park Plan states that:

City Parks Commissioner Ray Lambert established the Brackenridge Zoological Garden on twelve acres of an old Confederate tannery site donated by Mrs. Koehler. In 1928, the San Antonio Zoological Society was established to purchase animals to be exhibited on a 50-acre tract which was the site of an old rock quarry adjoining Brackenridge and Koehler Parks [Martin 2000: A-6].

Current Use: A picnic pavilion.

Prior Use: Apparently it was always a picnic pavilion.

Preliminary Assessment of Historical Significance: The Principal Investigator believed the building is historically significant under NR Criterion A (association with an event or pattern of events important in the history of a community), for its link with Koehler Park, which was established in 1915 when Emma Koehler gave the city 11 acres of land in memory of her husband Otto Koehler and stipulated that malt liquors could be sold there (Green 2007:53). The building is also apparently significant under NR Criterion C, for its Rustic architecture, a rare style for San Antonio. It retains appreciable architectural integrity despite some alterations during the WPA-era and in the 1980s. HBSO Example 4 could be eligible for NR listing and/or city landmark designation, either individually and/or as a contributing site and structure to a potential NR Historic District and/or COSA historic district for BP or for Koehler Park.



Figure 7. View southwestward toward northeast corner of Koehler Pavilion.



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